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TECHNICAL NOTES
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STN PUB ALASKA FOREST RESEARCH CENTER
U. S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE

JUNEAU, ALASKA

No. 30

Fire Weather Measurements in Southeast Alaska, 1955

Forest fires have burned a few large areas in Southeast Alaska despite an annual precipitation ranging from 30 to 180 inches within the region. A relatively dry period occurs during May, June, and July when rainfall is only 10 to 15 percent of the annual total. The longest periods without rain rarely exceed 3 weeks and are normally much shorter. Dry years have occurred in 11- to 13-year cycles with precipitation as low as 80 percent of normal.

Fires may damage site quality as well as timber values. An example is the White-water Bay fire of 1928 which burned 100 acres in an area logged 2 years previously. Much of the established reproduction was killed and site quality was impaired on the steeper slopes by the burning of the organic fractions of the soil and subsequent erosion to bedrock.

Pulptimber operations in Southeast Alaska will produce fairly large clearcuttings in which the presence of loggers, the existence of slash and changes in micro-climate increase the risk and the hazard of forest fires. These conditions, together with the record of past fires, suggests the possible need for a system of fire danger rating. As a first step toward this objective, a record of fire-weather conditions is being compiled.

A fire weather station was constructed in 1955 at an elevation of 200 feet in a 250-acre section of the Maybeso clearcut, near Hollis, on Prince of Wales Island. Observations, made daily at 4:30 p.m. from June 25 to September 30, included air temperature, relative humidity, wind velocity, 24-hour precipitation and fuel moisture content.1/ The 1955 observations are presented in graphic form on the back of this page.

A study of available records indicates that fire weather conditions in Southeast Alaska might be similar to those of the Pacific Northwest. In that region it has been found that fires may burn in fine slash when fuel moisture content is less than 15 percent.2/ During 1955, the fuel moisture sticks in the Maybeso clearcut indicated values less than 15 percent on 37 days during 10 dry periods of 1 to 7 days duration. At no time did measured fuel moisture fall below 8 percent.

The Region 6 burning index is being used, on a trial basis, to express fuel inflammability. Observations of fire weather factors and related fire behavior will continue in order to determine the suitability of this index for use in Southeast Alaska.

1/ The 1/2-inch fuel moisture indicator sticks used by Region 6, U. S. Forest Service.

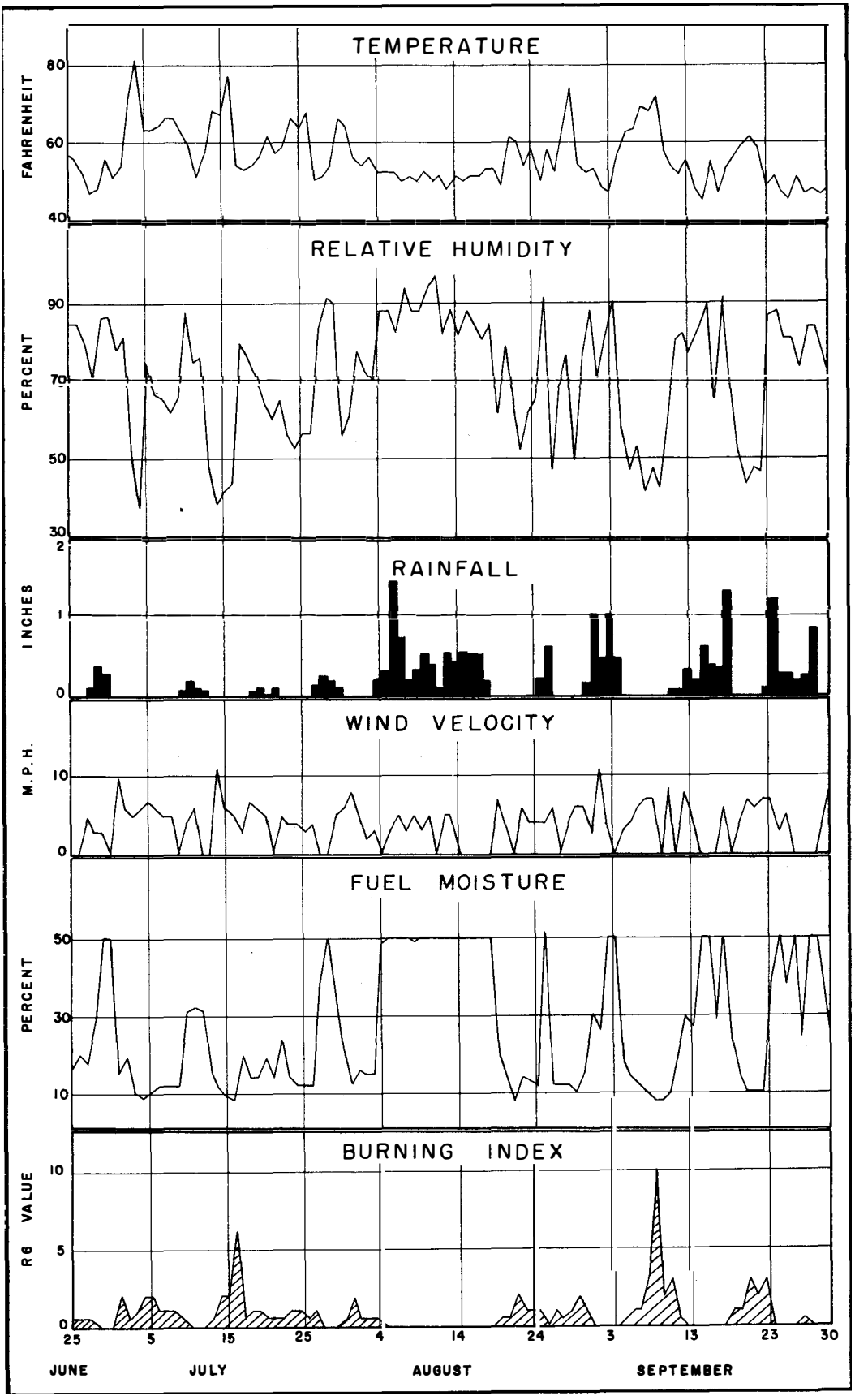
2/ Morris, William G. Fuel moisture indicator stick as guide for slash burning. The Timberman, Vol. LIV:10, Aug. 1953.

March 1956

R. C. McGregor

FIRE WEATHER FACTORS 1955

MAYBESO EXPERIMENTAL FOREST — *CLEARCUT AREA*



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